

What is claimed is:

1. An annular body element for a spool valve comprising:  
a body having an inner surface that defines an internal valving chamber having a longitudinal axis; and  
at least one transverse surface to the longitudinal axis, the transverse surface having at least one port comprising an annular flow passage, an intermediate flow passage and an outer flow passage extending outward from and in fluid communication with the inner surface of the internal valving chamber.
2. The body element according to claim 1, wherein the annular flow passage is an annular gap created between opposed transverse surfaces of body elements maintained in a spaced apart relationship.
3. The body element according to claim 1, wherein the intermediate flow passage is formed by an annular groove located in the at least one transverse surface.
4. The body element according to claim 1, wherein the outer flow passage is located in an outer edge of the transverse surface.
5. The body element according to claim 1, wherein the at least one port is multiple ports having outer flow passages at spaced intervals in the outer edge of the transverse surface.
6. The body element according to claim 1, wherein the at least one port are one of slits and notches positioned radially outward from the longitudinal axis of the body element.

7. The body element according to claim 1, wherein the cylindrical elements comprise at least one of a polymer and a metallic material.

8. A spool valve comprising:

a spacer element disposed between at least two body elements,

the body elements each having

a body having an inner surface that defines an internal valving chamber

having a longitudinal axis; and

at least one transverse surface to the longitudinal axis, the transverse surface having at least one port comprising an annular flow passage, an intermediate flow passage and an outer flow passage extending outward from and in fluid communication with the inner surface of the internal valving chamber.

9. The spool valve according to claim 8 wherein the annular flow passage is an annular gap created between opposed transverse surfaces of the body elements maintained in a spaced apart relationship by the spacer element.

10. The spool valve according to claim 8 wherein the intermediate flow passage is formed by an annular groove located in the at least one transverse surface.

11. The spool valve according to claim 8 wherein the outer flow passage is located in an outer edge of the transverse surface.

12. The spool valve according to claim 8 wherein the at least one port is multiple ports having outer flow passages at spaced intervals in the outer edge of the transverse surface.

13. The spool valve according to claim 8 wherein the at least one port are one of slits and notches positioned radially outward from the longitudinal axis of the body element.

14. The spool valve according to claim 8 further comprising a manifold body that maintains the at least two body elements in a stacked relation.

15. The spool valve according to claim 14 further comprising a spool disposed in the inner surface of the at least two stacked body elements for reciprocating movement along the longitudinal axis therein, and

a plurality of inlet/outlet ports provided in the manifold body such that upon reciprocating movement of the spool, the inlet/outlet ports are selectively interconnected.

16. The spool valve according to claim 8 wherein the at least two elements comprise two elements which are each asymmetrical about a transverse plane through its axial midpoint, with one half having the transverse surface;

and further comprising at least one additional element having transverse surfaces disposed on opposed halves of the element, the at least one additional element being stacked in end-to-end relation between the asymmetrical body elements with additional spacer elements disposed between the transverse surfaces.

17. The spool valve according to claim 8 wherein the cylindrical elements comprise at least one of a polymer and a metallic material.

18. The spool valve according to claim 8 wherein the spacer element is a substantially flat ring.

19. The spool valve according to claim 8 wherein the spacer element comprises at least one of a polymer and a metallic material.